TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-04-13-02** **Date: 17-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer's Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-04-17
Sample ID No	:	2017-04-13-02/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004),
Date of test	:	13-04-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	65	60 to 70
2	Softening Point, °C	48.8	Min. 40°C
3	Ductility, cm	100+	Min. 75cm
4	Flash point, °C	228	Min. 220°C
	Fire point, °C	254	

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Harshitha

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TEST RESULTS OF GRADATION FOR GSB
(IS 2386:(Part 1) 1963 (RA2011)

Lab ID	:	**CP-RW-2017-04-01-02** **Date: 03-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	01-04-17
Sample ID No	:	2017-04-01-02/01
Type of Mix	:	GSB (Granular Sub Base)
Date of test	:	01-04-17
Oven Dry Weight(gm)	:	10000

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec. Limit Vide Table 400.1 MORTH Specification
75	0	0	0	100	100
53	198	198	1.98	98.0	80-100
26.5	2166	2364	23.64	76.4	55-90
9.5	1743	4107	41.07	58.9	35-65
4.75	2232	6339	63.39	36.6	25-55
2.36	1165	7504	75.04	25.0	20-40
0.425	1124	8628	86.28	13.7	10-25
0.075	976	9604	96.04	4.0	0-5

TESTS ON FILLER SCREEN MATERIALS

Sl no	Particulars	Test results	Spec.Limit Vide Table 400.2 MORTH Specification
1	Liquid Limit, %	22.80%	Maximum 25
2	Plasticity index, %	Non plastic	Maximum 6

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Prepared By:
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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-04-02** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-04-17
Sample ID No	:	2017-04-04-02/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	04-04-17
Oven Dry Weight(gm)	:	11000

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	188	188	1.71	98.3	95-100
22.4	2075	2263	20.57	79.4	60-80
11.2	2322	4585	41.68	58.3	40-60
4.75	2287	6872	62.47	37.5	25-40
2.36	1876	8748	79.53	20.5	15-30
0.6	555	9303	84.57	15.4	8-22
0.075	1378	10681	97.10	2.9	0-5

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-07-02** **Date: 08-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	07-04-17
Sample ID No	:	2017-04-07-02/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	07-04-17
Oven Dry Weight(gm)	:	10000

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	162	162	1.62	98.4	95-100
22.4	2176	2338	23.38	76.6	60-80
11.2	2199	4537	45.37	54.6	40-60
4.75	2864	7401	74.01	26.0	25-40
2.36	947	8348	83.48	16.5	15-30
0.6	732	9080	90.80	9.2	8-22
0.075	654	9734	97.34	2.7	0-5

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TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-10-02** **Date: 12-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	10-04-17
Sample ID No	:	2017-04-10-02/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	10-04-17
Oven Dry Weight(gm)	:	10000

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	191	191	1.91	98.1	95-100
22.4	2121	2312	23.12	76.9	60-80
11.2	2085	4397	43.97	56.0	40-60
4.75	2217	6614	66.14	33.9	25-40
2.36	1213	7827	78.27	21.7	15-30
0.6	575	8402	84.02	16.0	8-22
0.075	1258	9660	96.60	3.4	0-5

Note:-

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-04-04-02** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-04-17
Sample ID No	:	2017-04-04-02/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	04-04-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	309.0	309.1
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	68.6	66.2
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	240.1	242.2
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.7
5	Aggregate impact value	(B/A)*100	22.2	21.4
6	Aggregate impact value (Mean of two tests)	Pecentage	21.8	

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Certificate No.: T- 4358

DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-04-02** **Date: 06-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-04-17
Sample ID No	:	2017-04-04-02/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	04-04-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	13.5%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	11.2%	
Combined Flakiness and Elongation Index for WMM	24.7%	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-07-02** **Date: 08-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	07-04-17
Sample ID No	:	2017-04-07-02/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	07-04-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	9.8%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.1%	
Combined Flakiness and Elongation Index for WMM	21.9%	

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SPECIFIC GRAVITY AND WATER ABSORPTION TEST
(IS:2386 Part III)

Lab ID : CP-RW-2017-04-13-01 Date: 17-04-17

Customer : Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.

Address : Yelahanka Satellite Sub Division, BBMP, Bangalore.

Project Name : Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03

Agency : Technical Manager(West), KRIDL, BBMP, Bangalore.

Customer Reference : BBMP/EE(YNK.D)/W.O/142/2017-18

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 13-04-17

Sample ID No : 2017-04-13-01/01

Type of Mix : Coarse Aggregate for BC (Bituminous Concrete)

Date of test : 13-04-17

SLNo	Details of Observations	Index	Unit	Test 1	Test 2	Mean Value
1	Weight of Wet aggregates + Basket suspended in water	A1	grams	2221	2123	
2	Weight of Empty Basket suspended in water	A2	grams	791	728	
3	Weight of Aggregates in water	A=A1-A2	grams	1430	1395	
4	Weight of Saturated Surface Dry aggregate	B	grams	2295	2254	
5	Weight of oven dried aggregate	C	grams	2290	2250	
6	Specific gravity	C/(B-A)		2.65	2.62	2.63
7	Apparent Specific gravity	C/(C-A)		2.66	2.63	2.65
8	Water absorption	100*(B-C) /C	Percent	0.22	0.18	0.20

Note:-
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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS:2386 Part 1)

Lab ID	:	**CP-RW-2017-04-13-01** **Date: 17-04-17**
Customer	:	Assistant Executive Engineer, Yelahanka Satellite Sub Division, BBMP, Bangalore.
Address	:	Yelahanka Satellite Sub Division, BBMP, Bangalore.
Project Name	:	Asphalting to Roads and improvements to drains in Muneshwara Layout 1st Main and cross roads of Attur Ward No.03
Agency	:	Technical Manager(West), KRIDL, BBMP, Bangalore.
Customer Reference	:	BBMP/EE(YNK.D)/W.O/142/2017-18
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	13-04-17
Sample ID No	:	2017-04-13-01/01
Type of Mix	:	Coarse Aggregate for BC (Bituminous Concrete)
Date of test	:	13-04-17

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 500-16
Flakiness Index	9.9%	Combined Flakiness & Elongation Index for BC is Maximum 35%
Elongation Index	12.6%	
Combined Flakiness and Elongation Index for BC	22.5%	

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